The 2017 Decadal Survey for Earth Science And Applications from Space: Interview Results

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STI Interviewed Fire, Fuels, Smoke, and Air Quality Managers

Objectives were to

- Develop coherent story of fire, fuels, smoke, and air quality management needs
- Identify key scientific questions that need to be addressed to meet those needs
  - particularly those that could be addressed through remote sensing research in the next 10 years

Interview Participants

29 interview participants

- Covered the spectrum from basic research to operational use of remotely sensed information
- Provided input from a range of responsibility levels
- National coordination to local management
  - Researchers
  - Fire managers
  - Field technicians
  - Smoke managers
  - Data managers

Needs Comments: Overview

Needs Comments: Key Points

What people would like to see

1) Better resolution of vegetation and fuel structure
2) Better access to data
3) Improved temporal resolution of Landsat and other data sources
4) Better measurements of active fire (both temporal and spatial)
5) Improved spatial resolution of MODIS/VIIRS
6) Techniques for using UAS/Drones
7) Emphasis on maintaining data continuity, especially for Landsat and MODIS

Needs Comments: Key Points

Suggested need/ improvement	Data Manager (N=4)	Field Technician (N=2)	Fire Manager (N=6)	Researcher (N=13)	Smoke Manager (N=4)	Total (N = 29)
Vegetation/Fuel Structure	3	2	5	8	2	20
Improve data access/Training	4	1	3	9	2	19
Improve Temporal Resolution	3	0	5	7	1	16
Improve active fire growth monitoring	3	0	2	5	4	14
UAS/Drone Technology Use	2	1	5	3	3	14
Improve Spatial Resolution	2	1	4	6	0	13
Data Continuity	1	0	4	1	1	7

Needs Comments: Overview

Better Access to Data (1)

"We are swimming in data, the hard part is finding the good data."

"We are living in a time when we have access to so much data we don't know what do with it."

"I don't know what's out there. I know the things that we need and have sought them, but I don't know what else is out there, or what to do with it if I had it."

Better Access to Data (2)

"NASA has been a data organization… Go a step further. One of the problems we have is a data explosion… There are zetabytes of data in the world. We are having trouble dealing with the information we've already got. We need analytics to give us knowledge, not information…**Don't dump more pictures on our desk."**

Improved Temporal Resolution

"More Landsat sensors, more Landsat sensors, more Landsat sensors."

On active fires, "the more looks the better…every 15 minutes would be good, with that we could tell what the fire was doing and where it was going."

"We could make a big impact with higher frequency…Give me more frequent data, and give me data that meets our requirements…We don't need to read license plates."

Improved Spatial Resolution

"30m resolution doesn't help me make my plan. It would be very helpful to have something higher resolution to help me out."

"1m resolution would be fantastic"…"I need to be able to resolve shrubs about 1 meter in diameter, I can't do that with 30m resolution and can't do anything with the MODIS vegetation data."

"Being that we deal with vegetation primarily, being able to discern pieces of vegetation is key."

Data Continuity (1)

"Continuity of MODIS and Landsat data has a *cornerstone, fundamental role,* as far as people and agencies using the data are concerned"

"If I had to choose between data continuity and new sensors, I want to keep what we have been using, for instance keep Landsat for MTBS fire severity classifications. Consistent tools and access to those tools should be a priority."

Data Continuity (2)

"There is a push to get better spatial and temporal resolution, but what about long-term continuity? We can't let Landsat just disappear. We have to keep the lights on. The data has an extreme amount of value. Continuity will allow the data to be used for long-term studies, development of relativized models, and predictor products that are based on historical observations that provide long-term conditions and ease operational use".

Future of his Project

STI is in the process of producing a journal article for submission to the International Journal of Wildland Fire.

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